

Claims

What is claimed is:

- 1 1. A method comprising:
 - 2 intercepting an operating system thread creation request for a function;
 - 3 creating a thread in response to intercepting said operating system thread
 - 4 creation request, said thread including a stack;
 - 5 modifying an initial stack pointer of said stack; and
 - 6 executing said function utilizing said thread in response to modifying said initial
 - 7 stack pointer of said stack.
- 1 2. The method of claim 1, wherein intercepting an operating system thread
2 creation request for a function comprises:
 - 3 linking a dynamic-link library to a process, said process including a reference
 - 4 table; and
 - 5 initializing said dynamic-link library.
- 1 3. The method of claim 2, wherein said reference table includes a reference
2 corresponding to an operating system thread creation function and initializing said
3 dynamic-link library comprises replacing said reference corresponding to said
4 operating system thread creation function with a reference corresponding to a substitute
5 thread creation function.
- 1 4. The method of claim 3, wherein
2 intercepting an operating system thread creation request for a function
3 comprises intercepting an operating system thread creation request for a first function;

4 creating a thread in response to intercepting said operating system thread
5 creation request comprises creating a thread for a second function; and
6 executing said function utilizing said thread in response to modifying said initial
7 stack pointer of said stack comprises executing said first function.

1 5. The method of claim 4, wherein
2 intercepting an operating system thread creation request for a first function
3 comprises intercepting a call to said operating system thread creation function
4 including a reference to said first function and a function parameter; and
5 creating a thread for a second function comprises:
6 determining a stack pointer offset;
7 creating a data structure including said reference to said first function,
8 said function parameter, and said stack pointer offset; and
9 generating a call to said operating system thread creation function
10 including a reference to said second function and a reference to said data
11 structure.

1 6. The method of claim 5, said method further comprising executing said second
2 function utilizing said thread.

1 7. The method of claim 6, wherein modifying an initial stack pointer of said stack
2 comprises modifying said initial stack pointer of said stack utilizing said stack pointer
3 offset in response to executing said second function utilizing said thread.

1 8. The method of claim 7, wherein modifying said initial stack pointer of said
2 stack utilizing said stack pointer offset in response to executing said second function

3 utilizing said thread comprises incrementing said initial stack pointer by said stack
4 pointer offset.

1 9. The method of claim 6, wherein executing said first function comprises
2 executing said first function utilizing said reference to said first function and said
3 function parameter.

1 10. A machine-accessible medium having machine-executable instructions
2 embodied therein which, when executed by a machine, causes said machine to perform
3 a method comprising:
4 intercepting an operating system thread creation request for a function;
5 creating a thread in response to intercepting said operating system thread
6 creation request, said thread including a stack;
7 modifying an initial stack pointer of said stack; and
8 executing said function utilizing said thread in response to modifying said initial
9 stack pointer of said stack.

1 11. The machine-accessible medium of claim 10, wherein intercepting an operating
2 system thread creation request for a function comprises:
3 linking a dynamic-link library to a process, said process including a reference
4 table; and
5 initializing said dynamic-link library.

1 12. The machine-accessible medium of claim 11, wherein said reference table
2 includes a reference corresponding to an operating system thread creation function and
3 initializing said dynamic-link library comprises replacing said reference corresponding

4 to said operating system thread creation function with a reference corresponding to a
5 substitute thread creation function.

1 13. The machine-accessible medium of claim 12, wherein
2 intercepting an operating system thread creation request for a function
3 comprises intercepting an operating system thread creation request for a first function;
4 creating a thread in response to intercepting said operating system thread
5 creation request comprises creating a thread for a second function; and
6 executing said function utilizing said thread in response to modifying said initial
7 stack pointer of said stack comprises executing said first function.

1 14. The machine-accessible medium of claim 13, wherein
2 intercepting an operating system thread creation request for a first function
3 comprises intercepting a call to said operating system thread creation function
4 including a reference to said first function and a function parameter; and
5 creating a thread for a second function comprises:
6 determining a stack pointer offset;
7 creating a data structure including said reference to said first function,
8 said function parameter, and said stack pointer offset; and
9 generating a call to said operating system thread creation function
10 including a reference to said second function and a reference to said data
11 structure.

1 15. The machine-accessible medium of claim 14, said method further comprising
2 executing said second function utilizing said thread.

1 16. The machine-accessible medium of claim 15, wherein modifying an initial stack
2 pointer of said stack comprises modifying said initial stack pointer of said stack
3 utilizing said stack pointer offset in response to executing said second function utilizing
4 said thread.

1 17. The machine-accessible medium of claim 16, wherein modifying said initial
2 stack pointer of said stack utilizing said stack pointer offset in response to executing
3 said second function utilizing said thread comprises incrementing said initial stack
4 pointer by said stack pointer offset.

1 18. The machine-accessible medium of claim 15, wherein executing said first
2 function comprises executing said first function utilizing said reference to said first
3 function and said function parameter.

1 19. A data processing system comprising:
2 a processor;
3 a first memory coupled to said processor, said first memory comprising a
4 virtually-addressable cache memory; and
5 a second memory coupled to said first memory, said second memory
6 comprising:
7 a first program module to intercept an operating system thread creation
8 request for a function and to create a thread in response to an interception of
9 said operating system thread creation request, said thread including a stack;
10 a second program module to modify an initial stack pointer of said stack
11 and to execute said function utilizing said thread in response to a modification
12 of said initial stack pointer of said stack.

1 20. The data processing system of claim 19, wherein said initial stack pointer of
2 said stack comprises a virtual address corresponding to a location within said virtually-
3 addressable cache memory.

1 21. The data processing system of claim 19, wherein said first program module and
2 said second program module comprise a dynamic-link library linked with a process,
3 said process including a reference table.

1 22. The data processing system of claim 21, wherein said reference table includes a
2 reference corresponding to an operating system thread creation function and said first
3 program module to intercept an operating system thread creation request for a function
4 comprises a first program module to replace said reference corresponding to said
5 operating system thread creation function with a reference corresponding to a substitute
6 thread creation function.

1 23. The data processing system of claim 22, wherein
2 said first program module to intercept an operating system thread creation
3 request for a function and to create a thread in response to an interception of said
4 operating system thread creation request comprises a first program module to intercept
5 an operating system thread creation request for a first function and to create a thread for
6 a second function; and
7 said second program module to modify an initial stack pointer of said stack and
8 to execute said function utilizing said thread in response to a modification of said initial
9 stack pointer of said stack comprises a second program module to execute said first
10 function.

1 24. The data processing system of claim 23, wherein said second program module
2 comprises said second function.

1 25. The data processing system of claim 23, wherein said first program module to
2 intercept an operating system thread creation request for a first function and to create a
3 thread for a second function comprises:

4 a first program module to intercept a call to said operating system thread
5 creation function including a reference to said first function and a function parameter;
6 to determine a stack pointer offset; to create a data structure including said reference to
7 said first function, said function parameter, and said stack pointer offset; and to
8 generate a call to said operating system thread creation function including a reference
9 to said second function and a reference to said data structure.

1 26. An apparatus comprising:

2 a first program module to intercept an operating system thread creation request
3 for a function and to create a thread in response to an interception of said operating
4 system thread creation request, said thread including a stack;

5 a second program module to modify an initial stack pointer of said stack and to
6 execute said function utilizing said thread in response to a modification of said initial
7 stack pointer of said stack.

1 27. The apparatus of claim 26, wherein said first program module and said second
2 program module comprise a dynamic-link library linked with a process, said process
3 including a reference table.

1 28. The apparatus of claim 27, wherein said reference table includes a reference
2 corresponding to an operating system thread creation function and said first program

- 3 module to intercept an operating system thread creation request for a function
- 4 comprises a program module to replace said reference corresponding to said operating
- 5 system thread creation function with a reference corresponding to a substitute thread
- 6 creation function.

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